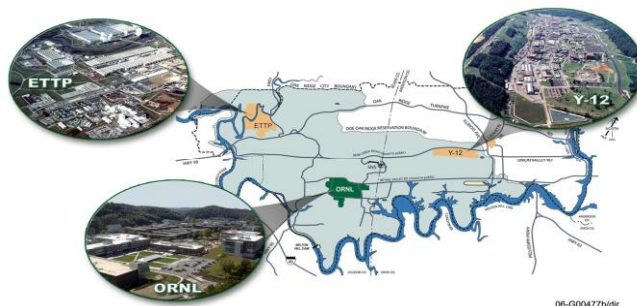


Major Risk Factors to the Integrated Facility Disposition Project (IFDP)

Challenge

The scope of the Integrated Facility Disposition Project (IFDP) needs to comprehensively address a wide range of environmental management risks at the Oak Ridge Reservation (ORO). These include: environmental remediation, regulatory compliance, deactivation and decommissioning (D&D) activities, and disposition of legacy materials and waste, along with the ongoing modernization, reindustrialization, and reconfiguration initiatives at the Oak Ridge National Laboratory and at the Y-12 National Security Complex. The balancing of the broad nature of these activities and issues at ORO are a key challenge for the IFDP especially since their interrelationship is not always obvious.



Technical Solution

An External Technical Review (ETR) was conducted by the Office of Engineering and Technology (EM-20), with the concurrence of DOE Oak Ridge Office, to address the potential risks to the IFDP. The ETR was conducted in accordance with the "External Technical Review Charter of Major Risk Factors in the Integrated Facility Disposition Project (IFDP) in Oak Ridge, TN," dated June 2008. The charter identified the following major risk factors: (1) Treatment and Disposal of large quantities of Mercury Contaminated Soil and Debris, and (2) Technical Approaches related to Facility Reconfiguration for Radioactive Waste and Liquid Low-Level Waste (LLLW) Management.

Technical Accomplishment

The ETR found no severe technical issues that need to be resolved prior to IFDP consideration, and observed that:

- Overall risk is appropriately characterized for the current stage of the project
- Integrating multiple programs in addressing environmental management issues across Program Secretarial Offices is commendable
- Addressing legacy waste and facilities issues as soon as practicable should assist in optimizing the total cost magnitude, risk reduction, and schedule duration.

Observations On Mercury Waste Treatment And Disposal:

- The goals, objectives, and benefits of mercury remediation need additional specificity and clarity, as the IFDP alone will not "get rid of environmental liabilities"
- There is no direct linkage between mercury source reduction and emerging state and EPA surface water protection standards
- Source reduction is a key component of the primary regulatory drivers
- Programmatic risk can be avoided through aggressive implementation of CERCLA remedial action, updating the overall regulatory strategy; and shipment of mixed low-level waste prior to expiration of the ability to dispose at the Nevada Test Site

Site Project & Identifier

Oak Ridge – Integrated Facility Disposition Project

Tech Stage: Technical Assistance

External Technical Review

Observations On Reconfiguring Facilities For Radioactive Waste Processing And Management:

- IFDP has done a commendable job in developing reconfiguration alternatives
- The technology needed is relatively mature
- Greater attention must be devoted to the uncertainty of future requirements of the ongoing missions and infrastructure needed to serve them as well as allowing space and easy connections for the utilities and facilities requirements for likely future missions which might argue for a modular approach
- Further consideration should be given to upgrades for the capability of the Transuranic Waste Processing Center in-lieu of building new Remote Handled Solids processing facilities since project assumptions may cause an artificial bias toward building new facilities
- A "Focus Team" should evaluate handling and disposition of "difficult to process" wastes
- Replacing the LLLW treatment system with a treatment approach closer to the waste source is a reasonable element for a modular approach unless the economies-of-scale argue otherwise; further, the possible use of trenchless technologies could affect such a decision
- Assumption and timing for the D&D of the hot cells in Bethel Valley and the building of new facilities in Melton Valley as part of the relocation of highly radioactive material processing and disposition (HRMP&D) from Bethel Valley seems reasonable; however, further consideration should be given to the existing hot cell facilities which might satisfy HRMP&D during the reconfiguration in Bethel Valley
- Planning at Y-12 to bypass utilities during D&D of excess facilities should consider alternate methods (e.g. re-route cooling water lines or install facility specific chillers; re-route compressed air or install a single or multiple stand alone units)

Impact:

The ETR Team's efforts in addressing the major risk factors of the IFDP found no severe technical issues needing to be resolved prior to IFDP consideration. In respect to the primary risk factors which were reviewed, the ETR Team concluded, with reasonable confidence, that the technical approaches planned to remediate contamination and to carry out the reconfiguration of facilities can be done safely and effectively, and consistent with environmental stewardship.

Impact and Features

- Increased confidence in technical approaches with respect to remediating contamination, and facility reconfiguration
- Reprioritization of activities, such as addressing legacy waste and facilities issues as soon as practicable, to assist in optimizing the total cost magnitude, risk reduction, and schedule duration
- Accelerated regulatory interaction regarding the benefits and objectives of current mercury remediation activities
- Further consideration to options to upgrade capability of existing facilities, in lieu of building new ones, and the applicability of modular services

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Web Links: www.inspi.ufl.edu/global2009/program/abstracts/9267.pdf
www.p2s.com/pdf/Integrated%20Facilities%20Disposition%20Project.pdf
<http://www.em.doe.gov/EM20Pages/PDFs/ETRReport7-31-08-Final.pdf>

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Challenge Category	Tech Solution Category
<ul style="list-style-type: none">• Low Level Waste• Mixed Low Level Waste• Facility Stabilization• D&D• Facility Reconfiguration	<ul style="list-style-type: none">• Secondary Waste Minimization• Waste Handling• Decontamination• Dismantlement• Radioactive Waste Management